

ABSTRACT

The present invention provides a microporous polyolefin membrane of novel structure, and also provides a method of producing a microporous polyolefin membrane of high permeability and novel structure.

The microporous polyolefin membrane is formed by the fine fibrils, composed of (A) a polyolefin having a weight-average molecular weight of 5×10^5 or more or (B) a composition containing this polyolefin, connected to each other, and has micropores of 0.05 to $5 \mu\text{m}$ in average pore size and crystal lamellas of the polyolefin inclined at an angle θ of 80 to 100° to the plane constituting the membrane account for at least 40% of the total lamellas both on the section cut in the mechanical direction and on the section cut in the direction perpendicular to the mechanical direction and in the thickness direction. The method of producing the microporous polyolefin membrane comprises the steps of extruding the solution, composed of 10 to 50 weight % of (A) a polyolefin having a weight-average molecular weight of 5×10^5 or more or (B) a composition containing this polyolefin and 50 to 90 weight % of a solvent, into a gel-like formed article; thermally setting the article, with or without stretching, at least at the crystal dispersion temperature of said polyolefin (A) having a weight-average molecular weight of 5×10^5 or more or said composition (B) containing this polyolefin, but at melting point of said polyolefin (A) having a weight-average molecular weight of 5×10^5 or more or said composition (B) containing this polyolefin plus 30°C or lower; and removing the solvent.